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p 4

Foreign Agriculture

June 20, 1977

Foreign
Agricultural
Service
U. S. DEPARTMENT
OF AGRICULTURE

JUN 20 1977



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A tea picker pauses before re-
turning to work on a tea
plantation in the Aberdeen
Valley of Sri Lanka.

Rising Coffee Prices: Tea Producers' Boon

By Rex E.T. Dull

The spectacular rise in coffee prices over the past year has certainly benefited coffee producing countries. And who else? Tea has become a favorite substitute of consumers, opting to switch rather than fight escalating coffee prices. Thus, export earnings of the world's tea producers may hit \$1 billion this year—an expected increase of about 25 percent—as tea supplies remain tight and prices high.

The phenomenal rise in world coffee prices over the past year has been a windfall for tea producing countries as well as for coffee producers. As consumers scurry to find alternative beverages for high-priced coffee, tea has emerged as one of the favorite substitutes.

Mr. Dull is an agricultural economist with Foreign Commodity Analysis, Sugar and Tropical Products Division of Foreign Agricultural Service.

With the world tea supply and demand nearly balanced during the last several years, the sudden upsurge in tea consumption has resulted in a tightening of supplies and a sharp rise in prices—despite an anticipated record world tea crop this year.

Last year, London auction prices for all teas averaged about 70 U.S. cents per pound, compared with 63 cents in 1975 and the 10-year average (1966-75) of 51 cents per pound. In contrast, during the first 4

months of 1977, London prices — skyrocketing to \$1.87 for April — have averaged \$1.37 per pound.

Still, tea is priced well below coffee. On an average basis, one pound of black tea yields about 200 cups while a pound of green tea produces about 150 cups. In comparison, one pound of roasted, ground coffee makes about 50 cups.

Traditionally, more than two-thirds of tea usage in the United States has been in the form of iced tea. Today, the percentage of hot tea consumption is likely to increase as more U.S. consumers switch from coffee to tea, especially in the colder months of the year.

Therefore, tea importers have been increasing their orders in anticipation of growing demand. Last year, U.S. tea imports reached a record 82,239 metric tons valued at \$95.3 million, compared with 72,252 tons valued at \$88.1 million in 1975. During 1977's first 4 months, U.S. tea imports have been very heavy and the full-year figures could approach 100,000 tons if this trend continues.

Preliminary data show that U.S. retail tea sales last

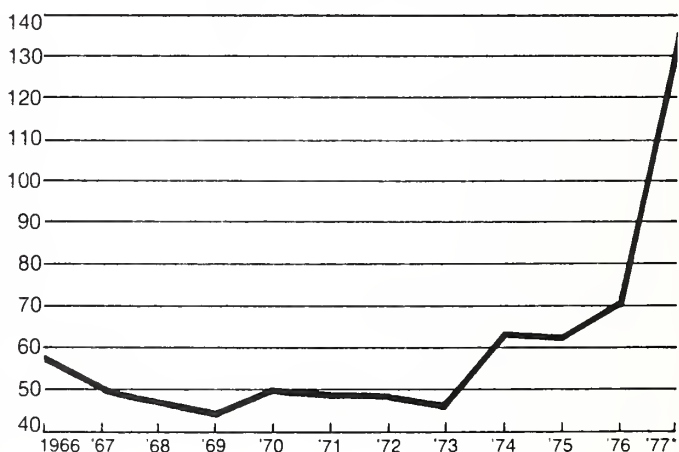
year added up to a record 67,132 tons valued at \$539 million, up from year-earlier levels of 63,504 tons valued at \$508 million. U.S. tea sales in 1977 should easily exceed those of last year.

Tea consumption in the United Kingdom — the world's largest importer — is again on the uptrend after gradually losing its market share to coffee for many years. Tea consumption bounced back in 1976, and further gains are expected this year as retail coffee prices continue to soar. U.K. tea imports last year totaled 224,612 tons, up from 218,361 tons in 1975. The heavy shipments early this year indicate another increase for 1977.

Benefiting from this uptrend in tea consumption, producing countries are enjoying higher tea-export revenues this year. However, this higher income will likely be offset by increased costs of fertilizer, petroleum, and imported items from industrial nations.

World export tea revenues in 1975 were more than \$800 million, up impressively from \$658 million in 1974 and \$550 million in 1973. Export earnings,

**Average Annual London Auction Prices for All Teas
(In cents per pound)**



*January-April.



Indian women, above left, harvest tea as India's crop this year is expected to surpass 1976's record. At an outdoor restaurant in New Delhi, patrons relax with a cup of tea. The country's domestic tea consumption will absorb much of the increased production. Tea pickers, at left, take a break, posing for a passing photographer.

probably near \$800 million in 1976, will likely surpass \$1 billion this year.

World tea production—excluding the People's Republic of China—is forecast at 1.35 million tons this year, a gain of 3.1 percent over 1976's record harvest. Despite this expanded output, however, there will be little increase in export supplies, as part of the gain will be absorbed by the producing countries.

Based on preliminary indications, India's crop this year will probably top the record 1976 outturn of 513,000 tons. But, India is the world's largest tea con-

sumer as well as producer, so expanding domestic consumption will account for a large share of the increased output. In fact, India's domestic market usually absorbs more than one-half of the country's crop. In efforts to ease high tea prices at home and to improve revenues, the Indian Government has recently implemented a tea export duty and has withdrawn the excise duty rebate scheme.

Production prospects for Sri Lanka (Ceylon) are only slightly better this year, and only a small increase in exports is anticipated. The 1976 harvest of only 196,000

tons was the smallest since 1959. Production and marketing have been disrupted following the nationalization of the Sri Lankan tea industry. In anticipation of the Government takeover, growers have been reducing fertilizer usage, as well as holding back on expanding area or replacing unproductive bushes.

Japan's crop this year will probably be a record, but virtually all of the Japanese harvest is consumed domestically, with only a few thousand tons reaching the export market. A slight increase is forecast for Indonesian tea production

and exports, but supplies from most other Asian producers will likely show little change this year over 1976 levels.

African production and exports are projected to be slightly higher this year—largely reflecting increased output in Kenya. Part of this overall gain, however, will be offset by lower production in Uganda and Zaire. Little change in output is expected among the small producers in South America this year.

Thus, world supplies are expected to remain tight, and prices high for the near future.

Egypt Has High Demand For U.S. Farm Products

As with many Arab countries in recent years, Egypt's demand for imported farm goods has skyrocketed and at present shows no sign of abating. Although agricultural production has been steadily rising (up 4 percent in 1976), demand exceeds output, and the United States is still the major exporter benefiting from this need.

Demand for agricultural commodities in Egypt increased roughly 7 percent in 1976, with imports rising 11 percent to an estimated \$1.6 billion. The U.S. share of this total was \$454 million.

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Demand for agricultural commodities in Egypt increased roughly 7 percent in 1976, with imports rising 11 percent to an estimated \$1.6 billion. The U.S. share of this total was \$454 million.

About 25 percent of this value was financed under concessional terms for shipments from the United States, European Community (EC), and Australia.

Despite greater economic assistance from OPEC (Organization of Petroleum Exporting Countries), the United States, and Western

Europe, Egypt's foreign exchange position was strained by buoyant import demand for food, consumer goods, and construction materials. (Egypt's total exports remained at \$1.8 billion in 1976, while imports increased to more than \$4.4 billion.)

The upward trend in Egypt's agricultural imports will be difficult to reverse. Consumer prices are fixed at artificially low levels, while demand is increasing. Although farmers are bolstering output of vegetables and fruits for domestic consumption, nearly all of the increase in urban requirements for cereals, vegetable oils, and certain agricultural products used by industry (tobacco and tallow) are supplied by imports.

In addition, higher per capita incomes, resulting in higher standards of living and a better diet, have fostered increased purchases of more varied foods, which often must be imported. Over one-third of Egypt's supply of butter and cheese, as well as one-fifth of its meat supply, is imported.

Despite some gain in domestic wheat production

(from 1.6 million metric tons in 1972 to 1.97 million tons in 1976), Egyptian imports of wheat and wheat flour are rising rapidly. Imports totaled 4.0 million tons in 1976, (3.1 million tons of wheat and 900,000 tons of wheat flour in wheat equivalent). The U.S. share of these imports increased from 30 percent (1 million tons) in 1975 to 44 percent (1.8 million tons) in 1976. Forecasts for U.S. exports of wheat to Egypt in 1977 range from 1.5-1.8 million tons.

Egypt's total imports of wheat and wheat flour in 1977 may increase about 5 percent to 4.1 million tons, owing to strong demand, new grain storage programs, reductions in wheat area, and availability of favorable financial terms. The shift in Egyptian diets from coarse grains to wheat products is likely to remain an important factor in the growing demand for wheat.

Bread and wheat flour are highly subsidized by the Egyptian Ministry of Supply, at a loss of about \$1 billion annually. Over 90 percent of the bread sold in Cairo and Alexandria is made from imported wheat or wheat flour.

Lower world prices for wheat have provided some benefits for Egypt's strained financial position. Lower wheat prices probably allowed Egypt to reduce the cost of wheat imports by roughly \$100 million in 1976, although the quantity imported increased by about 14 percent.

The upward trend in Egypt's imports of corn and soybean meal is also expected to continue in 1977. A 25 percent increase in Egypt's poultry output in 1976 boosted need for imported feed. In addition to rising demand for imported corn among commercial poultry farmers, larger supplies are needed for expand-

ing dairies and starch factories.

Egypt is now the leading Mideast corn importer, taking a record 670,000 tons in 1976—valued at \$88 million. The United States supplied nearly all (644,000 tons) of this total, and in 1977 imports are likely to approximate 700,000 to 800,000 tons.

While demand has been growing, Egypt's domestic production of corn has decreased to 2.71 million tons in 1976 from 2.78 million in 1975. Government policy and prices paid to farmers have encouraged Egyptian farmers to shift production from corn to rice and cotton, a trend likely to continue in 1977.

Imports of vegetable oils—another top Egyptian import—were valued at \$180.5 million in 1976, down somewhat from the \$209.7 million worth imported in 1975. Cottonseed oil shipments, the major imported oil, were down to 168,000 tons, compared with 279,623 tons in 1975, owing to increased imports of soybean oil, which more than tripled between 1975 and 1976.

Competition from Brazilian soybean oil caused U.S. exports of cottonseed oil to Egypt to retreat from a peak of 192,429 tons in 1975 to 138,309 tons in 1976. A rebound in U.S. exports of vegetable oils to Egypt is expected in 1977, however, since total supplies fell short of demand in 1976.

The combination of low prices for tea served in restaurants and subsidies for retail sugar prices contributed to the boom in demand for these two commodities. Tea imports of 44,000 tons in 1976 were more than three times the 14,411 tons imported in 1974. Sugar imports in 1976 of 258,000 tons, valued at \$146 million, were one of Egypt's major agricultural

Based on reports from John B. Parker, Jr., ERS, and H. Reiter Webb, Jr., U.S. Agricultural Attaché, Cairo. Mr. Parker is also the author of the article beginning on the next page.

imports in 1976.

Larger output of soap and rising exports of cosmetics have stimulated Egypt's demand for imported tallow. U.S. tallow shipments to Egypt have increased steadily from 64,613 tons in 1973 to 127,534 tons in 1976.

Despite larger shipments of tobacco to Egypt by the United States, Italy, Zambia, and Brazil, Egyptian cities are experiencing a severe shortage of cigarettes. Egypt's imports of leaf tobacco increased dramatically in 1976, rising to

more than 30,000 tons, compared with 25,888 tons in 1975. Higher world prices and a rising proportion of U.S. leaf caused the value of tobacco imports to rise even faster than quantity. The value of 1976 tobacco imports is estimated at \$65 million, compared with \$48 million in 1975.

Imports of U.S. tobacco increased from 5,400 tons in 1975 to approximately 9,000 tons in 1976. Purchases of 4,200 tons of U.S. tobacco under Title I of Public Law 480 provided some

assistance to tobacco product managers, but fell short of demand.

Imports of dairy products from the EC and Oceania are another sector that has increased substantially in the past few years. Shipments of dry and condensed milk, primarily through concessional financing by the EC, increased from only 2,456 tons in 1973 to over 15,000 tons in 1976.

Cheese imports bounced from 733 tons in 1973 to over 4,500 tons in 1976, owing primarily to larger ar-

rivals from Australia. Imports of butter and butter oil from France, Belgium, and the Netherlands during 1974-76 were more than 40 times the average quantity received from the EC during the previous 4 years.

Owing to its shortage of meat and animal products, Egypt is a net importer of livestock and livestock products. Most meat and livestock imports are to supply the ever-increasing needs of urban areas, as the countryside is self-sufficient in meat production.

Competition Heightens In Egyptian Market

The rapid growth in Egypt's agricultural imports from an average of \$301 million during 1970-73 to a record \$1.6 billion in 1976 has given rise to spirited competition from many suppliers, including the United States, the European Community (EC), Australia, India, and Latin America.

Although the United States is still Egypt's top supplier of farm products, the U.S. share of the Egyptian import market declined from 41.2 percent in 1973 to only 28.4 percent in 1976, as competitors took most of the gain in Egypt's total agricultural imports of meat, dairy products, and fast-moving items such as processed foods and canned meat, juices, and fruits.

The most obvious competition for U.S. exporters in the Egyptian market in the past year included rising sales of Australian and Canadian wheat, Brazilian soybean oil, and African tobacco.

While U.S. wheat exports to Egypt are rising, exports of Australian and Canadian wheat to Egypt in 1977 will rise at a much faster pace. Competition from Brazilian soybean oil caused U.S. sales of cottonseed oil to decline 36 percent in value in 1976—down from a record \$114 million in 1975. Also, the growth in U.S. tobacco exports to Egypt has been slowed, owing to marked gains in imports from Africa and Brazil.

If the U.S. share of Egypt's foreign imports of farm products in 1976 had remained at the same level as in 1973, the value of U.S. farm exports to Egypt would have been about \$659 million, rather than \$454 million. About half of this latter sum included Title I financing under Public Law 480.

Concessional financing is the key to food exports by a given country to Egypt. Demand for most farm products usually exceeds supply in Egypt, and serious shortages of

foreign exchange prevent ending this imbalance. However, the foreign exchange position of Egypt has improved considerably since 1975 when imports were nearly \$5 billion and exports were only \$1.6 billion.

Imports of petroleum drilling equipment and construction materials declined in 1976, causing the value for all imports to fall to \$4.4 billion. At the same time, larger exports of crude petroleum lifted total exports to \$1.8 billion.

Larger imports of food, machinery, and industrial raw materials will cause total imports to again approximate \$5 billion in 1977, but rising exports of petroleum and cotton could push export values up as high as \$2.5 billion. Egypt will also earn almost \$1 billion in 1977 from Suez Canal tolls, Sumed pipeline fees, and other services.

Among Egypt's most important agricultural imports—and the ones for which most competition exists—are:

Cereals. As Egypt's agricultural imports become more diversified, the share held by cereals has declined somewhat. Demand for meat, dairy products, and other items with a high income elasticity is rising faster than demand for basic items such as bread. The share of Egypt's total agricultural imports attributed to wheat and wheat flour declined from 61.3 percent in 1974 to only 34.8 percent in 1976, yet wheat and wheat flour remain Egypt's top agricultural import.

The U.S. share of Egypt's 4-million-metric-ton wheat and wheat flour import total increased to 44 percent in 1976, compared with 30 percent in 1975, and may show a gain in 1977.

Australia's wheat exports to Egypt are scheduled to rise over 50 percent in 1977 to roughly 1.5 million tons. Canadian wheat exports are also forecast to climb this year—from token levels in previous years to 500,000 tons in 1977.

As U.S., Australian, and Canadian market shares increase, that of the EC will probably decline sharply, providing only 6 percent of Egypt's 1977 wheat imports.

However, no serious effort is being made to solve the meat problem, at least for the short term. There is some possibility, however, that within 13 years, Egypt will be importing over 200,000 tons of frozen meat annually. During 1976, the Ministry of Supply imported 52,000 tons of frozen meat. In addition, private firms have recently been importing more meat, particularly for hotels and fast-food restaurants in Egypt.

Egyptian farmers have found it profitable to keep

more farm animals in recent years, as the increasing demand for animal protein, particularly red meat, and the higher prices paid for livestock products, have made animal husbandry more financially attractive than traditional crops.

The number of animals slaughtered increases every year owing to the greater number of animals imported. However, this is still overshadowed by population growth and the steady increase in per capita income.

Animal imports in 1976 totaled 20,000 head of cattle, 50,000 head of sheep, and 65,000 head of camels, all primarily from the Sudan and Somalia.

The United States continues to be Egypt's top supplier of farm products, with U.S. shipments reaching a record level of \$620 million in 1976, compared with \$599 million in 1975, according to Egyptian trade data. (This includes some transshipment of U.S. products from Europe and Canada.) Exports to Egypt

compared with 23 percent in 1975 and 16 percent in 1976.

The EC will also see its share of Egypt's flour imports drop to 25 percent, compared with 85 percent in 1975 and 42 percent in 1976. The United States—previously supplying 50 percent of Egypt's flour import—will see its market share increase to 66 percent in 1977. Imports from France, West Germany, Spain, and Italy will be down from peak levels recorded during 1970-75.

The United States supplied nearly all of Egypt's corn imports during 1972-75. In 1977, U.S. corn exports to Egypt may reach 800,000 tons, accounting for practically all of Egypt's imports. Brazil, Romania, and Zambia have occasionally been sources of Egypt's corn imports.

Vegetable oils. Egypt's imports of vegetable oils, which peaked at 317,000 tons in 1975, declined to about 233,000 tons in 1976 as Ministry of Supply officials attempted to import lower price products. Imports of palm oil from Malaysia and Singapore increased, as did purchases of processed oils from Europe.

The U.S. share of Egypt's imports of vegetable oils increased from 38 percent in 1974 to 83 percent in 1975, then dipped to 60 percent in 1976, as the dominance of U.S. cottonseed oil imports was diminished by imports of Brazilian soybean oil totaling 30,000 tons. Imports from Brazil are likely to increase further in 1977.

Meat and dairy products. Improvement in the availability of foreign exchange for imports has allowed Egypt to import larger quantities of products that were not considered top priority when funds were more difficult to obtain. Meat is one of these items; imports zoomed from 9,600 tons in 1974 to 88,000 tons in 1976, yet meat shortages remain critical.

Australia, the EC, and Latin American countries have supplied most of Egypt's expanding meat imports in recent years. The U.S. share was less than 1 percent of the total in 1976, consisting of 30 tons of special cuts of beef, valued at \$160,000.

Egypt's imports of beef are expected to total over

100,000 tons in 1977, of which Uruguay's share is expected to reach 53,000 tons. Australia is also expected to see its shipments of beef to Egypt rebound this year, as sales in early 1977 were 15,000 tons, compared to only 9,083 tons during all of last year.

Egypt plans to increase its imports of frozen poultry sharply in 1977, possibly up to 25,000 tons. In 1976, the Ministry of Supply and private importers purchased 5,000 tons of frozen poultry from Argentina and Europe. Back in 1974, the United States was the source of all of the 1,154 tons of poultry imported from Egypt, although the trade involved transshipment through another country.

Egypt has also become an important market for European canned meat. Corned beef is also imported from Brazil and new sources like Botswana. Private importers with funds from Arabian Peninsula countries are expanding their imports of canned luncheon and dried meat.

As with meat imports, the United States is only a minor supplier of dairy products to Egypt—accounting for 1 percent of the market. Top competitors in the dry milk sector include France, the Netherlands, Belgium, West Germany, and New Zealand, while France and Belgium are top shippers of butter and butter oil. Australia is a big supplier of cheese—accounting for 60 percent of the market. Czechoslovakia and East Germany are also important suppliers of cheese to Egypt.

Tobacco. Zambia and other African suppliers are becoming important suppliers of tobacco to Egypt, as are Italy and Brazil, but the United States is still a main source of this item.

Vegetables and preparations. Imports of vegetables and preparations soared to 187,475 tons, valued at \$49.4 million in 1975—about nine times the 1974 level—owing primarily to an increase in pulse imports from 17,000 tons to 151,000 tons. In the past, the United Kingdom, Syria, and Ethiopia have provided most of Egypt's pulse imports. This year, Egypt's imports may again reach 150,000 tons. □

in 1977 are estimated at \$700 million. Wheat and wheat flour accounted for almost half of the value of U.S. farm product shipments last year. Corn, cottonseed, and tallow were other important agricultural exports.

Other top agricultural exporters to Egypt in 1976 included the EC (\$400 million), Australia (\$210 million), and India (\$80 million). In 1977, these countries are estimated to ship \$350 million, \$280 million, and \$95 million worth of farm products to Egypt, respectively.

Despite the fact that desert covers roughly 97 percent of Egypt's land, agricultural production is rising. Local farmers supply most of the fresh produce sold in Egyptian cities.

Egyptian vegetable production increased roughly 8 percent in 1976 to a record 7.6 million tons, accelerated by higher profits from growing vegetables, compared with most traditional crops.

In contrast to prices paid to farmers for cereals, which are fixed at artificially low levels, prices paid for vegetable crops are moving upward with the present inflationary spiral. Most Egyptian consumers prefer fresh produce rather than canned goods.

The leading vegetable crop grown in Egypt is tomatoes, which are available at produce stands throughout the year. In 1976, 2.2 million tons of tomatoes were produced in Egypt. Tomato output in 1977 is expected to be between 2.3 million and 2.5 million tons, owing to rising demand, multiple cropping, and greater use of fertilizer.

Egypt's mild winter climate allows farmers to grow an array of cool-climate vegetables—onions, garlic, cabbage, lettuce, cauli-

flower, and carrots—from November through March, when prices for these items in Europe are high.

Egyptian exports of fresh vegetables remain primarily of two traditional items—onions and potatoes—because they are the least perishable and Government companies earn excellent profits from sales.

High prices and larger sales in Europe caused the value of Egypt's exports of onions and potatoes to rise markedly in 1976. Exports of potatoes to the United Kingdom in early 1976 reached 106,000 tons, up from 16,000 tons during all of 1975. Exports of onions to Eastern Europe and the Middle East increased in 1976, but much larger shipments could have been made, had Egyptian supplies been available.

Past Government control of onion and potato exports, as well as low prices to farmers, have hindered Egypt's ability to quickly respond to new world market opportunities.

Yet Egypt is importing 3,300 tons of seed potatoes from Maine and even larger supplies from Europe. Dramatic gains in purchases of the latest improved varieties of U.S. vegetable seed are scheduled for 1977.

Potato production has also been increasing rapidly (from 720,000 tons in 1975 to 850,000 tons in 1976), as have export shipments (from 49,000 tons in 1975 to over 110,000 tons in 1976).

Egyptian fruit production in 1976—at an estimated 2.17 million tons—is roughly 5.5 percent above the 2.06 million tons harvested in 1975, and about 57 percent above that of 1970.

A favorite crop in land development projects is oranges, which thrive in relatively poor, sandy desert soils. Many new orange groves planted in the last

decade are now coming into a stage of heavy production, and the 1976/77 harvest of oranges may reach 900,000 tons, compared with 856,021 tons in 1974/75. Output of tangerines has risen as well, reaching 98,000 tons in 1976/77, compared with 96,601 tons the year before.

Oranges and tangerines, combined, accounted for over half of the area devoted to orchards in 1975. This excludes the area planted to dates, which is scattered around the country, seldom in a planned orchard.

New date groves have been planted in the New Valley and Tahrir to offset extensive loss of date orchards in 1970, when previous date area was flooded by Lake Nasser, upon completion of the High Dam at Aswan. Date production for the past 3 years has averaged roughly 400,000 tons, compared with only 294,000 in 1970.

Other important Egyptian fruits whose production is increasing are bananas, figs, guavas, and grapes.

A shift of land in the northern Delta from corn to rice provided Egypt with a badly needed increase in rice output after years of lagging performance. The 1976 rice harvest is placed at 2.53 million tons of paddy—up from 2.43 million in 1975. Corn production, however, declined from a record 2.78 million tons in 1975 to about 2.71 million tons in 1976. Production in 1977 is estimated to increase slightly.

The area planted to wheat in 1977 is expected to decline in order to make room for a scheduled expansion in cotton plantings. Through greater use of improved seed varieties and fertilizer, Egyptian planners hope wheat yields will improve and total output will not fall much below 1.9 million tons.

“The United States continues to be Egypt's top supplier of farm products . . . Wheat and wheat flour accounted for almost half of the value of U.S. farm product shipments last year. Corn, cottonseed, and tallow were other important U.S. exports . . . Other top agricultural exporters to Egypt in 1970 included the EC, Australia, and India.”

Brazil's Grain Crops Up in 1976

By Edmond Missiaen

With a record wheat harvest completed in December, Brazil can point to increased production of all major grains in calendar 1976. The short-term impact will probably be a reduction in imports of U.S. wheat, and increased Brazilian exports of rice and corn.

Meanwhile, the 1977 crop, now being harvested, is expected to exceed the record outturn of that crop in 1976. The rice crop, currently being harvested, will be reduced somewhat as a result of low prices received for the 1976 crop.

With a record wheat harvest in December, Brazil can point to increased production of all major grains in calendar 1976.¹ The short-term impact will probably be a reduction in imports of U.S. wheat, and increased Brazilian exports of rice and corn.

Meanwhile, the 1977 corn crop, now being harvested, is expected to exceed the record outturn of that crop in 1976. The rice crop, currently being harvested will be reduced somewhat as a result of low prices received by producers for the 1976 crop. Wheat area is ex-

pected to remain at a high level in 1977.

The record 1976 commercial wheat crop is estimated at 3.0 million metric tons—produced from a planted area of 3.6 million hectares—an outturn 96 percent greater than 1975's extremely low level of 1.55 million tons. Production would have been higher had it not been for bad weather, especially excessive rains, which hit all major producing areas and caused the spread of plant diseases.

Wheat production is estimated to reach 3.5 million tons in 1977, while planted area is expected to decrease slightly to 3.5 million hectares. Encouraging the planting of this large area is Brazil's guaranteed market for wheat. The Bank of Brazil is committed to buy at a preestablished price all the domestic wheat offered for sale by Brazilian farmers.

One factor that might affect the size of the wheat area is the relative area planted to soybeans, since soybeans and wheat are generally doublecropped in southern Brazil.

The 3.5-million-hectare figure is 3 percent less than in 1976. However, expansion in soybean area is expected to prevent a larger reduction, despite the lower than expected Brazilian soybean producer price and higher fertilizer prices resulting from the Government's phaseout of the 40-percent domestic fertilizer subsidy at the beginning of the year.

In the late 1960's and early 1970's, more area was planted to wheat than to soybeans, but in more recent years planted wheat area has been less than 60 percent of the soybean area. In 1976, the relationship of wheat area to that in soybeans changed further with wheat area approximately 53 percent of the soybean area. However, this trend could be reversed if wheat prices rise markedly.

Wheat imports in 1976 were higher than 1975's 2 million tons, but less than expected. Despite authority given to the Brazilian Wheat Board—the Brazilian Government's sole importing agency for wheat—to import 3.8 million tons in calendar 1976, only 3.4 million tons were actually received. The United States, with shipments of 1.6 million tons, was the leading supplier, followed by Canada, with 1.04 million tons, Argentina with 724,000, and France with 59,000.

Likely to run about 3.1 million tons in calendar 1977, wheat imports will include 250,000 tons from Canada, bought under the terms of the Brazilian-Canadian 3-year agreement (1975-78). However, Brazil's purchases from Canada could go over this amount, owing to an option Brazil has to purchase more.

Now officially set at 5.2 million tons, Brazil's consumption of wheat for food

in 1976 was 17.6 percent higher than 1975's, reacting strongly to a Government subsidy that lowered the price of bread and other wheat products below actual cost.

In São Paulo, for example, a kilogram of wheat flour has declined in price in relation to that of such staples as rice, beans, or manioc flour since at least 1974. However, in December 1976, the price of wheat to the mills was raised from about \$60 to close to \$96 per ton—including for the first time the cost of transportation—while the price to the farmer remained the same at \$177. This effectively cut the subsidy on domestically grown wheat by 33.5 percent and sent the price of a 50 gram loaf of bread—the most popular size on the market—from the previous 2 cents per gram to the present 2.4 cents per gram.

Despite the rise in wheat-food prices, Brazilian officials estimate that calendar 1977 consumption of wheat for food will approach 5.7 million tons, 9.6 percent higher than the 1976 level. But since the Government has canceled its plans to phaseout all of its subsidy on wheat flour by the end of 1977 for fear that such an action would put additional pressure on the economy, wheat consumption could increase even more in 1977.

One factor that could reduce usage of wheat for food was the enactment in 1976 of a Government policy requiring soybean flour to be mixed with wheat flour. Mandated to take effect on March 1, 1977, the deadline has been extended because of the country's lack of facilities for milling soybean flour, the current higher price for soybean flour relative to that of wheat flour, and logistical

¹The 1976 wheat crop (commercial production only) was harvested September-December 1976, to be marketed October 1976-September 1977; last year's rice, corn, and sorghum crops were harvested in March-June 1976 in southern and central Brazil and a few months later in northern and northeastern Brazil, and were marketed April-March 1977.

problems in delivering soybean flour to all of Brazil's mills.

Some soybean flour likely will be mixed with wheat flour on an experimental basis in the south, but it is improbable that the mixture will account for more than 1 percent of total wheat production. Many Government officials also have been promoting a mixture of rice and wheat flour, but it is likely production of such a mix will be limited.

Brazil's 1976 rice crop is estimated at 8.5 million tons, paddy—5.8 million, milled—from a harvested area of 6 million hectares. In 1977, area is expected to be down by about 10 percent, to 5.4 million hectares, but a slight drop in the average yield of about 15 percent will result in a crop of 7.2 million tons, paddy. Behind the crop falloff are the relatively low prices received by producers for the 1976 crop. The biggest declines in area have been in the States of Mato Grosso, Goiás, São Paulo, and Paraná.

Rice's role as a frontier crop usually helps boost total production. In such States as Mato Grosso, Goiás, and Minas Gerais, it is usually the first crop planted on newly cleared land. After one or two rice harvests, this land is normally converted to pasture or planted to other crops.

Also, rice is often planted between the rows of frost-damaged coffee trees, and frost-damaged pasture sometimes is planted with rice before grass reseeding takes place. Thus, the 1975 coffee-tree freeze undoubtedly helped to boost rice output in 1976 and may help to push the 1977 outturn.

Brazil's total exports of milled rice during the 1976/77 marketing year are expected to amount to



From top: Expanding corn production in southern Goiás has necessitated the use of inflatable storage facilities; researchers inspecting wheat experimental plots in Rio Grande do Sul; workers loading bagged corn in southern Goiás

"In the late 1960's and early 1970's, more area was planted to wheat than to soybeans, but in more recent years planted wheat area has been less than . . . the soybean area. In 1976, the relationship changed further . . . however, this trend could be reversed if wheat prices rise markedly."

182,000 tons—152,000 tons of good-quality rice and about 30,000 tons of broken. The broken were sold by the private trade with no Government assistance, while the remainder came from stocks of the Rio Grande do Sul Rice Institute (IRGA), and was sold by the Government's trading company, Interbrás.

About 40,000 tons of the total was rice imported from Uruguay and Colombia in 1975 and sold at a loss. The IRGA rice had been acquired domestically, and involved a direct Government subsidy.

Some 50 percent of the good-quality rice was shipped to the Soviet Union. Other markets included Poland, West and East European countries, and some African countries, including Nigeria and Angola.

Government officials hope that about 340,000 tons of milled rice can be exported during the 1977/78 marketing year. During calendar 1977, the Brazilian domestic-market rice price is not expected to be as high as it has been in recent months (compared with world prices), largely because of periodic cruzeiro devaluations and the slight improvement in the world price since mid-1976. It is likely, however, that the Brazilian internal price still will be higher than international market prices, and that exports of rice—other than broken—will require some subsidy.

Total rice exports during calendar 1976, including broken, were 76,350 tons. Exports during the current calendar year could be 400,000 tons or more of milled rice.

Exceptionally high during the 1976/77 market year, rice consumption was up by 11 percent over the previous year's, to some 4.5

million tons. Usage is likely to continue to expand at a good clip, at least through the 1977/78 marketing year, to reach 5.2 million tons.

The current high rate of domestic consumption is attributed to the relatively strong prices of beans and manioc flour. In addition, because of low producer prices, rice growers maintained larger than normal amounts of the product for their own use.

Increasing by 6-9 percent, Brazil's 1977 corn crop will probably be 19 million tons, up from 17.9 million in 1976/77, and 16.4 million the year before.

Plantings are up in the States of Goiás, Minas Gerais, and Rio Grande do Sul, but more or less unchanged in São Paulo, Paraná, and Santa Catarina. Production in the northeast is expected to recover from last year's drought-reduced level.

Most of Brazil's commercial corn production—that is corn grown for export or for feed makers—comes from northern and western Paraná, where it is grown on small and medium-sized farms, and from an area of rapidly increasing importance covering northern São Paulo, the western "pan-handle" of Minas Gerais, and southern Goiás, which is beginning to earn the name of Brazil's corn belt. In this multi-State area, corn is grown on large, mechanized farms, where yields average about 3,000 kilograms per hectare. This area is expected to continue to develop as a major corn-growing region as storage, drying, and transportation bottlenecks are overcome.

Corn exports for the 1976/77 marketing year (April-March) are now forecast at 1.51 million tons. Exports, April through December, were 1.34 million tons. Exports for all of

calendar 1976 were 1.37 million tons.

Principal markets for the 1.34 million tons exported during the first 11 months of calendar 1976 were: Spain, 613,000 tons; the Soviet Union, 467,000; Peru 75,000; Japan, 61,000; and West Germany, 25,000. Other important markets were Puerto Rico, Tunisia, the Netherlands, Italy, Belgium - Luxembourg, and Iraq.

Brazil could export up to 2 million tons of corn during the 1977/78 marketing year. One obstacle could be the relatively lower prices prevailing on the world market. The Brazilian guaranteed minimum producer price for corn during the 1977/78 season will be about \$85 per metric ton. The cost of moving corn to port, including freight, taxes, commissions, handling charges, etc., will be around \$36-\$40 per ton, bringing the total cost of shipments, f.o.b. Santos or Paranaguá, to \$121-\$125 per ton.

If the relatively high domestic prices hinder corn exports, it is likely the Government will evolve a subsidy formula to assist their movement.

Over half of Brazil's corn production remains on the farm. The most important outlet for the marketed half is the mixed feed industry. Corn consumed as a component of mixed feeds more than doubled between 1972 and 1976.

Total corn usage reached 16.2 million tons in 1976/77, and is expected to be up 3.7 percent during 1977/78.

Over 70 percent of Brazil's mixed feed is consumed by the poultry industry. The other major corn market is the food processing industry—starch, oil, meal makers, for example—which consumes about 800,000 tons per year, a level that is rising.

Italy's Lemon Output Drops, Oranges Rise

Although Italy's 1976/77 lemon crop is expected to be smaller than the previous season's, exports of this fruit are rising. Mandarin exports, on the other hand, are forecast to be sharply lower in a season of rising production. Italy's long-term citrus goals include planting of improved varieties and construction of new packinghouses.

Italy's 1976/77 lemon crop is expected to decline moderately from that of 1975/76 while orange and mandarin production increases. As a result of above-average precipitation during October - January, fruit size is larger this season but keeping quality and resistance to molds are below normal.

Although lemon production is dropping this season, exports — to Eastern Europe as well as the northern countries of Western Europe — are rising. Italy's orange exports, benefiting from European Community (EC) subsidies, also are predicted to rise. But mandarin exports are forecast to fall sharply in the face of increased competition from other Mediterranean countries.

Italy has been attempting to counter this trend with a plan, now several years old, to restructure the citrus industry. The plan, aided by

EC financing, is producing some results although it is behind schedule. Of the 42,000 hectares of citrus targeted for conversion to improved varieties by the end of 1976, only 2,600 hectares met EC requirements. The EC funds, however, have been more helpful in developing new packinghouses and processing plants, resulting in remarkable improvements in grading and packaging equipment. Two firms with U.S. affiliation have been particularly active in these areas.

The Italian citrus experimental station at Acireale on Sicily's east coast is expanding its operations to include preparations of certified propagation material for nurseries, experiments for controlling *mal secco* and other diseases, and development of new hybrids and disease-resistant varieties of citrus.

A closer look at Italy's current lemon, orange, and mandarin crops follows.

Lemons. The 1976/77 Italian lemon harvest, now estimated at 756,000 metric

tons, is the smallest in 3 years. This 8 percent decline from the previous year is largely attributed to adverse weather, particularly rains in May and July that resulted in flower and fruit dropping, and the higher than usual incidence of *mal secco* that caused early defoliation, especially in older orchards. Production of Verdelli lemons, however, will rise about 7 percent this year to an estimated 125,000 tons. Verdelli, marketed during April-August, is the only major variety expected to register production gains this season.

Lemon exports are placed at 280,000 tons, a 4 percent gain from 1975/76 and the highest volume in the last 5 years. The high export level is partly a result of increased purchases from East European countries, which continue to be more important outlets for Italian lemons. In contrast, Italian lemon exports to Western countries have declined in the face of stronger competition from some countries, such as Spain, Turkey, and Greece, that ship a better quality product from their relatively new lemon industries.

Italy's lemon exports during October 1975-July 1976 totaled 249,648 tons, an increase of 15 percent over those in the same period a year earlier. Although West Germany continued to be the largest customer (76,375 tons), exports to East European markets included: Poland, 42,235 tons (up 73 percent); the USSR, 23,635 tons (up 41 percent); Czechoslovakia, 22,169 tons (down 6 percent); and Hungary, 9,989 tons (up 181 percent). Exports during October 1976-January 1977 were 111,163 tons, an 8 percent gain over those in the same months a year ago.

Overall, producer prices for lemons have been above

last year's level because of Italy's high inflation and the strong demand from export markets and the processors. The outlook for this summer's offerings of Verdelli lemons calls for higher prices, mainly as a consequence of the drought in California.

Processing of lemons is expected to reach 150,000 tons in 1976/77, an increase of 9 percent from a year earlier, as the industry responds to attractive prices for essential oils and lemon juice. Lemon essential oil was recently selling at 17,000 lire per kilogram, f.o.b. producing plant—or nearly double the price a year ago. Lemon juice, single-strength equivalent, was selling for 110 lire per kilogram, compared with 70 lire a year earlier. Consequently, the processing industry is paying good prices, recently reaching 110 lire per kilogram for second- and third-grade fruits.

Some criticism has been leveled at the European Community's intervention system, which increases prices late in the season after the best oil-yielding fruits have been harvested. The Italian processing industry must compete with EC intervention stocks for fruits not suitable for the fresh-sale market. Italy's lemon industry is pressing Brussels for a subsidy for processing third-quality lemons—similar to the subsidy for blond oranges. An EC subsidy, based solely on fresh fruits regardless of quality, created supply problems for the lemon and essential oils industry last year. Some 18,000 tons of lemons were reportedly destroyed during 1975/76 by the Producers' Association.

Oranges. Production of sweet oranges in 1976/77 is expected to reach 1.68 million tons, 6.5 percent higher than that of a year earlier

Continued on page 15

Based on a report from Elmer W. Hallowell, U.S. Agricultural Attaché, in Rome.

Bangladesh Food Supply In Uncertain Balance

By Thomas H. Lederer

Bangladesh's food situation in 1976 was the best in the country's short history. But the balance between supply and demand may be precarious.

Two successive years of good harvests, combined with adequate stocks from domestic procurement and concessional imports, greatly eased food supply problems. The drain on domestic rice supplies that had resulted from smuggling of this commodity into India and Burma has decreased because of high rice production levels in these two countries.

Despite the favorable outlook, there is room for caution: Foodgrain stocks are now low, and water shortages may presage smaller-than-average *boro* (spring-harvested) crops.

Any production shortfalls would have to be met with additional concessional imports from the United

States and/or other donor countries.

Cooperation and coordination between Bangladesh and the donor countries is essential. An underestimation of need and/or poorly timed arrivals could precipitate a disaster.

Food aid has played an important part in the domestic food supply since Bangladesh gained its independence in December 1971. Other countries—with the United States as a major donor—launched a major effort in 1972 to assist the new Bangladesh Government in the enormous task of reconstruction, rehabilitation, and resettlement.

Foreign aid worth about \$1.4 billion (of which about a third was from the United States) poured in during the first 30 months and helped to avert starvation, rebuild homes, and restore much of the disrupted transportation system.

By mid-1974 Bangladesh's economic policy-makers, despite foreign aid, were faced with a foreign exchange crisis. Also, the worst flood in a decade caused pockets of famine as well as major food production and distribution problems.

Since late 1974, however, and continuing through 1976, Bangladesh has enjoyed a remarkable economic rebound.

Aided by good weather and foreign assistance, the Government has balanced its budget, encouraged the private sector's role in the economy, halted inflation, and improved its foreign-exchange position.

Gross domestic product, led by agricultural production, increased a record 11 percent in real terms during 1975/76.

The original estimates (milled basis) for the three Bangladesh rice harvests during 1976/77 were *aus* (grown in dry season), 3 million tons; *aman* (major rice crop, grown in rainy season), 7.2 million tons; and *boro*, 2.6 million tons. The *boro* wheat crop was estimated at 270,000 tons, for a total grain production of 13.1 million tons.

The volume of imported grain, based on these production estimates, was originally scheduled at 850,000 tons, including 200,000 tons of P.L. 480 wheat from the United States. Stocks of foodgrains were estimated at more than 500,000 tons—the minimum level required for use in the Government distribution system and for meeting emergency needs.

The situation for the 1976/77 crop has changed significantly since these estimates were made. The harvested *aman* crop is now estimated at 7 million tons. Because of a lack of irrigation water, the *boro* rice crop may be down, and wheat production could drop.

To maintain foodgrain availability, the government hopes to make up the production shortfall with increased concessional imports. Additional imports from the United States and other donors would help

create a stable food situation by maintaining stocks at workable levels to the end of calendar 1977 and by providing food in quantities consistent with minimal nutritional needs.

The original P.L. 480 agreement for 1976 / 77 authorized provision by the United States of 200,000 tons of wheat to Bangladesh. Proposed amendments to the agreement would authorize an additional 75,000 tons of wheat and 75,000 of rice.

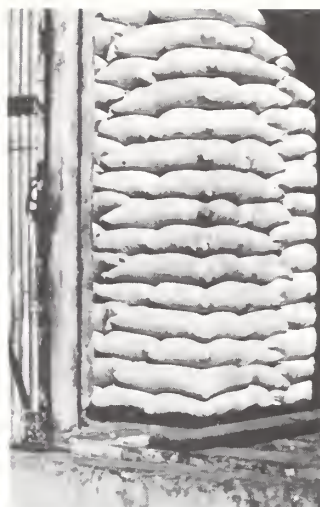
The amount of imported grain required is influenced by the amount of grain the Government can procure domestically. And this depends on the open-market price in relation to the procurement price offered by the Government. If prices at the farm level are low relative to the procurement price, the Government price acts as a support and encourages farmers to sell to the Government.

The possibility of a production shortfall suggests that market prices may rise above the procurement price and make it difficult for the Government to reach its procurement target of 500,000 tons. A smaller procurement would, in turn, increase the need for higher levels of concessional imports.

Officials now believe the country's distribution and storage facilities are in far better shape to handle increased imports than they were in 1976, when they were overwhelmed by a combination of imports and good harvests.

Some of the resulting domestic grain distribution problems can be traced back to the logistics involved in importing grain. Arrivals of grain from donor countries at times have coincided with peak harvest periods, and bunching of these arrivals (as frequently was the case) overwhelmed

Mr. Lederer's report is based on a recent official trip to Bangladesh. He is an agricultural economist with the Developing Countries Program Area, Foreign Demand and Competition Division, Economic Research Service.



Top left Loading bags of P L 480 rice into railway cars for transport to Dacca, Bangladesh. Top right Stacked bags of rice in a warehouse in Bangladesh. Bottom Bangladesh's expanding population is one of the Government's most pressing problems

port facilities as well as the country's internal grain distribution system.

A number of the untimely arrivals of imported rice and wheat reflected poor co-ordination between all of the donor countries and the Bangladesh Government, and in some cases, among the donor countries themselves.

Grain handling facilities at Bangladesh ports are set up mainly to receive and move wheat in bulk. Because about a third of the grain arrivals consisted of bagged rice, further distribution delays were encountered.

The high level of food-grain stocks during this time caused Bangladesh market prices to be lower than the subsidized ration prices, thus decreasing Government offtakes from

stored grain. Until this time, warehouses operated by the Government were essentially transit facilities that turned over their stock every 60 to 90 days.

The combination of larger stocks and slower turnover required handling facilities and storage capacity that the Government was not prepared to provide.

As a result of delays in distribution, some spoilage of grain—estimates of the amount vary considerably—occurred. Some U.S. press reports indicated spoilage of as much as 300,000 tons, but the Bangladesh Ministry of Food estimated only 30,000 tons spoiled.

Estimating the exact amount of spoiled grain rendered unfit for human consumption is difficult, if not impossible. Some grain arrived from donor coun-

tries in poor condition, and this grain was in some instances mixed with better quality imported and domestic grain, complicating efforts to identify damage traceable to storage problems.

By December 1976, the temporary problems associated with high levels of stored grain had disappeared as a result of a drawdown in stocks to below 500,000 tons—a reduction caused by lower levels of imports in the final 3 months of 1976 and increased use of stored grain in the rationing system.

Bangladesh has been improving and expanding its foodgrain storage capacity with the aid of several donor countries, including Denmark, Australia, the United Kingdom, and Canada, and total capacity is now

estimated by the Government at 1 million tons.

Officials had expressed the hope that the drawdown of stocks and the improved and expanded storage capacity would provide an incentive for a successful procurement drive during the *aman* and *boro* harvests.

About 25 percent of the 80 million-plus Bengalees participate in the country's ration system. There are five main categories of recipients, and the amount and type of rations supplied each ration card holder can vary with the category, depending on current need and total supply:

- The statutory ration area, which includes the urban populations of Dacca, Nayaranganj, Chittagong, Khulna, and Rajshahi;
- The modified ration area, which includes some

smaller towns and villages:

- Government workers and employees in large non-urban factories;

- The military, police, and hospitals;

- Those on relief.

Commodities included in the ration program are rice, wheat products, edible oil, white sugar, common salt, and — occasionally — washing soap. These commodities are obtained from both domestic procurement and concessional imports.

Although the Government increased the number of those eligible to participate in the ration system in 1976/77, it also decreased the subsidy by about 25 percent, thus bringing the ration prices closer into line with market prices.

The ration system complements the food supply available on the open market. A high price on the open market relative to the subsidized ration price causes and increase in off-take as consumers buy the lower priced rationed food. (Offtake is the removal of food commodities from Government stocks to meet Government requirements—the rationing system, food for work, and emergency relief.) At present, open market prices for foodgrains are moving up, and ration offtakes are growing.

Whether or not Bangladesh will be able to maintain the existing balance between food supply and demand depends largely on the effects of weather on the harvests and on concessional imports.

The country's agricultural production is just now beginning to surpass pre-Independence levels. Even with concessional imports and higher domestic grain output, population growth has been such that total availability of foodgrains on a per capita basis has remained at the same level.

Hungary's Poultry Gains Help Offset Beef, Pork Losses

Responding to a decline in beef and pork supplies, Hungary's poultry meat production last year rose to an alltime high of 300,000 metric tons, ready-to-cook (RTC) basis, according to Nicholas M. Thuroczy, U.S. Agricultural Attaché, Vienna. This gain, together with stable exports, allowed consumers to substitute poultry for scarce red meats and thus boost their per capita poultry meat consumption to a relatively high 18.5 kilograms.

For 1977, Thuroczy reports prospects for production gains in all meats, with a sharp advance in pork output leading red meat production to a 5-6 percent increase over that of 1976. He also forecasts a further gain in poultry meat output, but with much of the increase going into export as consumption of pork and beef return to more normal levels at the possible expense of poultry.

Poultry. All segments of Hungary's poultry industry—State, collective farms, and smaller producers—participated in the production expansion of 1976, estimated up over 10 percent from 1975's. Of the total poultry meat production, 141,000 tons were sold to State marketing agencies, including those handling exports, and the remaining 159,000 tons went to or through local sources.

Of the 141,000 tons moving through State marketing agencies, 103,000 went into export. The remaining 38,000 tons, combined with the 159,000 tons of local slaughterings, produced 197,000 tons of poultry meat for domestic consumption—an increase of about 31,000 tons from the previous year.

Hungary continued to ship large quantities of poultry abroad in 1976. About 40 percent of these exports moved to Western Europe; about 50 percent, went to the Soviet Union; and most of the remainder went to other countries of East Europe, the Middle East, and the Far East. The Middle East is a small, but growing market for Hungarian poultry meat, Thuroczy reports.

If Hungary's poultry production increases in 1977, as expected, a new export record could result as the previous high was only 104,000 tons, exported in 1975.

The poor corn crop in 1976, however, could hinder poultry and egg production this year as corn is also used for hog feed—and swine numbers have increased.

Egg production, dropping in 1976 for the first time in 4 years, is forecast to partially recover in 1977. In 1976, it fell an estimated 250 million from the 4-billion level of 1975. The de-

cline resulted, in part, from feed supply problems and the shifting of resources to produce more poultry meat.

State purchases amounted to 328 million eggs, all of which went for exports. This was a reduction from the 420 million exported in 1975.

Because private household farmers account for about 40 percent of Hungary's poultry and egg production, their economic well-being is vital to this sector of agriculture. These household farmers, enjoying Government supports, are operating at an even level contrary to some in neighboring nations, where the number of private poultry and egg producers has been declining slowly, Thuroczy says. Through various measures of assistance, the Hungarian Government has been successful in keeping the small producers in this sideline business. This help is especially critical because the small-scale operations of these producers do not permit them to utilize the advantages of modern, large-scale poultry production.

Red meats. The beef industry, long a troubled sector of Hungarian agriculture, continued to stagnate in 1976. Problems in the Hungarian cattle industry date back several years. In 1972, the Government attempted to build up cattle herds and cow numbers. After an initial success, setbacks occurred. The beef improvement program involved crossbreeding native cows with imported semen or bulls.

The U.S. Hereford breed was found to be ideal for the developing Hungarian beef industry. Initially, a large number of Hereford bulls and heifers were imported from the United States. But as these improvements started to show results, the

European Community (EC) embargoed cattle imports in July 1974, forcing Hungary to seek alternative beef markets, such as the Soviet Union's.

Since then, Hungary's beef-improvement program has slowed considerably. Still, small producers have been hard hit by changes in feeding technology that require moving cattle away from grass and pasture feeding to increased use of mixed feeds, with protein supplements in confinement feeding.

These increased feeding costs, coupled with the severe 1976 drought, brought about a 1 percent drop in cattle numbers to about 1.9

million, just slightly above 1972's levels, Thuroczky reports. Attempting to build up cattle herds, the Government held back large numbers of cows from slaughter.

Cattle slaughter in 1976 fell 14 percent to an estimated 325,000 tons, live weight. Live cattle exports also dipped, from 105,000 tons in 1975 to 81,000 last year. Most of the decline was reportedly in sales to the USSR, which normally takes almost two-thirds of all Hungarian cattle exports. A further decline in slaughter cattle production—to an estimated 320,000 tons—is projected in 1977. However, cattle numbers

are expected to rise about 15,000 this year.

Results in the pork sector last year were better as pig numbers increased 900,000 to 7.9 million head while the number of sows rose 60,000 to 660,000 head. Both large-scale and small producers participated in this upturn. These increases stopped a 2-year decline in operations of small producers, who raise more than 50 percent of all hogs in Hungary.

The comparatively small number of sows at the beginning of 1976, and the withholding of large stocks from slaughter led to a 16.5 percent decline in pigs for slaughter, to 895,000 tons.

Thus, 1976's production of pork (bone in) slipped an estimated 15 percent to 411,000 tons. Exports of live pigs also fell sharply from 20,000 tons live weight in 1975 to just 2,000 in 1976.

Pork prospects for 1977 are brighter on all fronts as increases of 7 percent in pig numbers, 6.6 percent in sows, and 10 percent in slaughter are expected. This is good news for Hungarians because pork traditionally accounts for more than 50 percent of their annual meat consumption.

During 1971 - 1974, Hungary's pork production (bone in) averaged about 415,000 tons.

Continued from page 11

Italian Citrus

but still 4.5 percent shy of the 1.76-million-ton record crop in 1974/75. Italy's orange crop was unusually late this season, with high prices prevailing at the beginning. Normal supplies, however, returned in early January, and prices have declined, except for blond oranges.

Freeze damages in Florida and a reportedly poor orange crop in Brazil have spurred a sharp increase in Italy's processing activity. Some 240,000 tons should be processed—a gain of about 20 percent from last year.

Restrictions in many countries on the use of artificial color are enhancing interest in blood oranges for food processing. Because of recent increased plantings, the share of blood oranges in Italy's total outturn is expected to rise to 71 percent, com-

pared with 68 percent last season. Several sales initiatives to the United States for blood orange juices, especially for the ice cream industry, have been reported by trade sources.

Italian exports of fresh oranges in 1976/77 are forecast at 215,000 tons, a gain of about 10 percent. Shipments, through January 1977, totaled 93,255 tons. This increase, the largest level since 1964/65, is attributed to smaller crops anticipated in some other Mediterranean nations and larger subsidies granted by the EC.

Mandarins. Overall 1976/77 output of mandarins (tangerines) are pegged at 354,000 tons, slightly above last season's record of 351,000 tons. Nonetheless, producers intervened early in the season and destroyed 38,000 tons. In turn, producer prices rose sharply.

Exports, however, have suffered because of increased competition from other Mediterranean countries as EC intervention has priced the Italian product out of many foreign markets. Through January 1977 mandarin Clementine exports, running 35 percent below those of the same period a year ago, were 11,772 tons. Total 1976/77 exports are expected to reach only 16,000 tons, a decline of 38 percent from 1975/76. But processed mandarins should total about 25,000 tons, against 8,000 last season.

Italy's mandarin exports in 1974/75 totaled 14,797 tons, up from 11,957 the previous year. In 1972/73, exports declined sharply to just 5,088 tons, compared with 15,420 tons a year earlier. During these years, processed mandarins averaged 28,000 tons annually.

Foreign Agriculture

Vol. XV, No 25 June 20, 1977

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The Secretary of Agriculture has determined that publication of this periodical is necessary in the transaction of public business required by law of this Department. Use of funds for printing *Foreign Agriculture* has been approved by the Director, Office of Management and Budget, through June 30, 1979. Yearly subscription rate: \$34.35 domestic, \$42.95 foreign; single copies 70 cents. Order from Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Contents of this magazine may be reprinted freely. Use of commercial and trade names does not imply approval or constitute endorsement by USDA or Foreign Agricultural Service.



First Class

Mexico Rates U.S. Holsteins Tops in Productivity

The genetic superiority of U.S. Holstein-Friesian bulls and the high milk productivity of their daughters in Mexican herds has been demonstrated in a comparison of U.S., Canadian, and Mexican cattle.

Mexican data were collected through the Mexican Dairy Herd Improvement (DHI) Program that is sponsored by the Mexican Government through the Mexican Holstein-Friesian Association (Asociación de Holstein-Friesian de Mexico). The data were analyzed by USDA in 1976. It is anticipated that arrangements will be made between the Mexican Government and USDA to continue this research on a cooperative basis.

Using DHI data for 47

Authors Rex L. Powell and Frank N. Dickinson are assigned to the Animal Improvement Programs Laboratory, Agricultural Research Service.

Mexican Holstein bulls and similar data for 92 U.S. bulls and 126 Canadian bulls, it was found that based on progeny tests, the U.S. bulls had an averaged estimated transmitting ability of 132 kilograms of milk higher than the average of all the bulls. This compared with a minus 52 kilograms for the Canadian bulls and a minus 209 kilograms for the Mexican bulls.

Thus, the average genetic transmitting ability for milk yield of the U.S. bulls was 184 kilograms greater than the Canadian bulls and 341 kilograms more than those from Mexico, recognizing that the Mexican bulls did not have the advantage of previous selection in another country.

Seven of the 10 highest ranking Holstein bulls were in artificial insemination service in the United States, two were from Canada, and the last was a Mexican son of the U.S. bull ranked sixth. Twenty-eight of the top 50 bulls originated in

the United States, 18 from Canada, and four of the animals were native Mexican bulls.

The study showed that in Mexican herds where cows imported from the United States and Canada were milked together, the U.S. cows produced an average of 175 kilograms more milk per lactation than those from Canada.

A total of 25,671 lactations were available from 14,054 Holstein cows in 63 Mexican herds.

In recent years, Mexican dairymen have been buying sizable numbers of U.S. Holsteins for breeding and herd improvement. In 1976, for example, U.S. cattle exports to Mexico were 31,000 head.

The study also revealed bull semen can be evaluated for export to Mexico on the basis of genetic comparisons from daughters in the United States. Of the U.S. and Canadian bulls evaluated in Mexico on the basis of their progeny, 142 also had sire evaluations on progeny in the United States. The correlations between the two sets of evaluations on the same bulls indicated no change in rank due to the different conditions of the two countries. □

U.K. Grain Crop Seen Bigger

The total grain crop in the United Kingdom now is estimated at 14.5 million tons, 1 million tons above that of 1976.

Because of heavy rainfall since last November, high yields are expected for all grain and forage crops. Use of grain for feed is expected to decline from last year's high level because of lower swine and beef cattle numbers and more plentiful pasture and hay.

The 1977 wheat harvest is forecast at 5 million tons, up from 4.8 million tons last year.

In 1976/77, the United Kingdom purchased an unusually high proportion of its requirements from other countries of the European Community because of the extremely good quality of EC soft wheats that resulted from the dry season in 1976.

In 1977/78, it is anticipated that the United Kingdom will switch a considerable percentage of its imports to North American wheats to maintain the quality of its grist. □